

What is Claimed:

1. An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microspheres of the
5 microsphere adhesive are the reaction product of (a) at least one alkyl (meth)acrylate ester wherein the alkyl group contains four to about 14 carbon atoms and (b) at least one nonpolar, ionic, polar comonomer or mixtures of such comonomers.
- 10 2. The adhesive coated article according to claim 1 wherein the microsphere adhesive has 90° peel value, as measured on Kromkote® paper in the range of 20 to 250 grams/in.
- 15 3. The adhesive coated article according to claim 1 wherein component (b) is a (meth)acrylamide monomer.
4. The adhesive coated article according to claim 1 wherein the microsphere adhesive further includes 1-10% by weight of an aqueous polyacrylamide material.
- 20 5. The adhesive coated article according to claim 1 wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester
25 monomers and at least one (meth)acrylamide comonomer with the proviso that the polar comonomer has no dissociable proton having a K_d of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres.

6. The adhesive coated article according to claim 1 wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester
5 monomers and at least one polar comonomer with the proviso that if the polar comonomer has a dissociable proton, the polar comonomer has no dissociable proton having a K_d of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100
10 parts by weight of the microspheres.

7. The adhesive coated article according to claim 1 wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester
15 monomer and at least one (meth)acrylamide comonomer, (b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of
20 between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.
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8. The adhesive coated article according to claim 7 further comprising
30 (f) at least one vinyl-unsaturated additive having both an ionic moiety and a hydrophobic moiety and containing at least 5 but not more than 40 carbon atoms in an amount of about 0.1 to 3 parts by weight of the microspheres.

9. The adhesive coated article according to claim 4 wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomer, (b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.

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15 10. The adhesive coated article according to claim 9 further comprising (f) at least one vinyl-unsaturated additive having both an ionic moiety and a hydrophobic moiety and containing at least 5 but not more than 40 carbon atoms in an amount of about 0.1 to 3 parts by weight of the microspheres.

11. The adhesive coated article according to claim 1 wherein the
20 microsphere adhesive comprises a plurality of hollow, polymeric, acrylate, inherently tacky, infusible, solvent-insoluble, solvent dispersible, pressure sensitive microspheres comprising (a) at least about 85 parts by weight of at least one alkyl acrylate ester or alkyl methacrylate ester, and (b) up to about 15 parts by weight of at least one (meth)acrylamide monomer, wherein a majority of the microspheres
25 contain at least one interior void having a diameter at least about 10% of the diameter of the hollow microspheres.

12. The adhesive coated article according to claim 4 wherein the
30 microsphere adhesive comprises a plurality of hollow, polymeric, acrylate, inherently tacky, infusible, solvent-insoluble, solvent dispersible, pressure sensitive

microspheres comprising (a) at least about 85 parts by weight of at least one alkyl acrylate ester or alkyl methacrylate ester, and (b) up to about 15 parts by weight of at least one polar monomer, wherein a majority of the microspheres contain at least one interior void having a diameter at least about 10% of the diameter of the
5 hollow microspheres.

13. The adhesive coated article according to claim 4 wherein the
microsphere adhesive comprises composite pressure sensitive adhesive
microspheres comprising a mixture of two or more water insoluble polymers that
10 are present wholly within the boundaries of the microspheres, wherein at least one
water insoluble polymer is a solute polymer and at least one water insoluble
polymer is a matrix polymer.

14. The adhesive coated article according to claim 1 wherein the
microsphere adhesive comprises composite pressure sensitive adhesive
microspheres comprising a mixture of two or more water insoluble polymers that
are present wholly within the boundaries of the microspheres, wherein at least one
water insoluble polymer is a solute polymer and at least one water insoluble
polymer is a matrix polymer, and wherein the solute polymer is a homopolymer or
20 copolymer prepared from (meth)acrylamide monomers.

15. The adhesive coated article according to claim 1 further comprising
a low adhesion backsize coating on at least a portion of the second major surface,
such that the low adhesion backsize coating is positioned directly under the
25 microsphere adhesive layer on the first major surface, such that when at least two
adhesive coated articles are stacked upon another, the microsphere adhesive layer
of a first adhesive coated article is contiguously positioned on top of the low
adhesion backsize coating of a second adhesive coated article.